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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,131	01/12/2001	Yuusuke Minagawa	040356/0352	8894

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EXAMINER	
CUEVAS, PEDRO J	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/758,131	MINAGAWA, YUUSUKE	
	Examiner	Art Unit	
	Pedro J. Cuevas	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-14* is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-4 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,782,257 to Secher et al. in view of U.S. Patent No. 4,749,898 to Suzuki et al.

Secher et al. discloses the construction of a motor/generator comprising:

a first rotor (4) provided with a plurality of magnetic poles by a magnet;

a second rotor (5) provided with a plurality of magnetic poles by a magnet and a plurality of rotor coils; and

a stator (1) provided with a plurality of stator coils applying a rotational force on the first rotor and the second rotor when a composite poly-phase alternating current (from excitation current source 20) is supplied to the stator excitation coils (6); wherein:

the number of magnetic poles in the magnet provided in the first rotor is equal to the number of poles in the magnet provided in the second rotor, as stated in line 24 of column 2;

the composite poly-phase alternating current comprises an alternating current, as stated in line 34 of column 2, forming a rotating magnetic field applying a rotational force on the first rotor and an alternating current forming a rotating magnetic field applying a rotational force on the second rotor; and

an exciting circuit or electronic device of known type, which excites a part of the rotor coils.

However, it fails to disclose a motor/generator wherein the first rotor and the second rotor being coaxially disposed and rotating independently from each other.

Suzuki et al. teach the construction of a super-precision positioning device wherein multiple rotors being coaxially disposed rotate independently from each other (ABSTRACT) for the purpose of providing translational movement and rotation of the output shaft in a two-dimensional surface with three degrees of freedom.

It would have been obvious to one skilled in the art at the time the invention was made to use the super-precision positioning device disclosed by Suzuki et al. on the motor/generator disclosed by Secher et al. for the purpose of providing translational movement and rotation of the output shaft in a two-dimensional surface with three degrees of freedom.

4. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,782,257 to Secher et al. in view of U.S. Patent No. 4,749,898 to Suzuki et al. as applied to claims 1-4 above, further in view of U.S. Patent No. 6,005,317 to Lamb.

Secher et al. in view of Suzuki et al. discloses the construction of a motor/generator as described above.

However, it fails to disclose a motor/generator, wherein:

one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by suspending the excitation of the part of the rotor coils by the exciting circuit and suspending the supply of the composite poly-phase alternating current to the stator coils;

the second rotor is provided with a plurality of pairs of the rotor coils and the motor/generator functions as a magnetic coupling in which one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by exciting a specific pair of the rotor coils by a second exciting current and suspending the supply of the composite poly-phase alternating current to the stator coils;

one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by supplying a third exciting current to the part of the rotor coils which flows in a direction opposite to the first exciting current, and suspending the supply of the composite poly-phase alternating current to the stator coils; and

the second rotor is provided with a plurality of pairs of the rotor coils and the motor/generator functions as a magnetic coupling, which varies a coupling force according to an excitation state of the plurality of pairs of the rotor coils.

Lamb teaches the construction of an adjustable coupler having a group of magnet rotors with permanent magnets separated by air gaps from non-ferrous conductor elements presented by a group of conductor rotors, wherein:

one of the first rotor (25) and second rotor (26) rotates the other of the first rotor and the second rotor in synchronization by suspending the excitation of the part of the

rotor coils by the exciting circuit and suspending the supply of the composite poly-phase alternating current to the stator coils;

the second rotor is provided with a plurality of pairs of the rotor coils and the adjustable coupler functions as a magnetic coupling (25 + 26) in which one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by exciting a specific pair of the rotor coils by a second exciting current and suspending the supply of the composite poly-phase alternating current to the stator coils;

one of the first rotor and second rotor rotates the other of the first rotor and the second rotor in synchronization by supplying a third exciting current to the part of the rotor coils which flows in a direction opposite to the first exciting current, and suspending the supply of the composite poly-phase alternating current to the stator coils; and

the second rotor is provided with a plurality of pairs of the rotor coils and the adjustable coupler functions as a magnetic coupling, which varies a coupling force according to an excitation state of the plurality of pairs of the rotor coils for the purpose of providing a mechanical alternative to VSD's which is far more economical, will automatically maintain the speed of the load to a preset speed as the load requirements vary, and will not require modification of the electric motor or adjustment of the input voltage of frequency.

It would have been obvious to one skilled in the art at the time the invention was made to use the adjustable coupler disclosed by Lamb on the motor/generator disclosed by Secher et al.

for the purpose of providing a mechanical alternative to VSD's which is far more economical, will automatically maintain the speed of the load to a preset speed as the load requirements vary, and will not require modification of the electric motor or adjustment of the input voltage of frequency.

5. Claims 9 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,782,257 to Secher et al. in view of U.S. Patent No. 4,749,898 to Suzuki et al. as applied to claims 1-4 above, further in view of U.S. Patent No. 5,124,606 to Eisenbeis.

Secher et al. in view of Suzuki et al. discloses the claimed invention except for a motor/generator, wherein:

the plurality of the rotor coils are connected in series and are excited by a direct current; and

two collector rings which supply an exciting current to the pair of the rotor coils.

Eisenbeis teaches the construction of a driving motor having a plurality of coils (4) connected in series and are excited by a direct current; and collector rings (11) which supply an exciting current to the pair of the rotor coils for the purpose of determining the speed and direction of the main rotor.

It would have been obvious to one skilled in the art at the time the invention was made to use the driving motor disclosed by Eisenbeis on the motor/generator disclosed by Secher et al. for the purpose of determining the speed and direction of the main rotor.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,782,257 to Secher et al. in view of U.S. Patent No. 4,749,898 to Suzuki et al. as applied to claims 1-4 above, further in view of U.S. Patent No. 5,117,141 to Hawsey et al.

Secher et al. in view of Suzuki et al. discloses a motor/generator as described above.

However, it fails to disclose a motor/generator having a device, which limits the rotation of the second rotor in a specified direction.

Hawsey et al. teaches the construction of a brushless dc permanent magnet motor with a drive unit, which limits the rotation of the second rotor in a specified direction for the purpose of causing a rotation of the two shafts connected to the rotors in opposite direction as stated in the Abstract.

It would have been obvious to one skilled in the art at the time the invention was made to use the brushless dc permanent magnet motor with a drive unit disclosed by Hawsey et al. on the motor/generator disclosed by Secher et al. for the purpose of causing a rotation of the two shafts connected to the rotors in opposite direction.

Allowable Subject Matter

7. Claims 12-14 are allowed.

8. The following is an examiner's statement of reasons for allowance: the prior art does not teaches a motor/generator as defined in Claim 11, wherein:

the first rotor is connected to a drive wheel of a vehicle;

the second rotor is connected to an engine mounted in the vehicle; and

the rotation limitation device comprises a one-way clutch which is interposed between the engine and the second rotor.

Claims 13 and 14 are considered allowed by their dependence on independent claim 12.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Néstor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
May 30, 2002

NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
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